

Health, education and employment status of Europeans aged 60 to 69 years: results from SHARE Survey

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Abstract: The objective of this study was to identify health and education related predictors of employment/self-employment in the age between 60 and 69 yr in Europe. Data were obtained from Survey of Health, Ageing and Retirement in Europe (SHARE) study-Wave 6. Our final sample (n=13,447) was retrieved from 16 European Union member states, Switzerland and Israel. We used logistic regression model including education level, physical and mental health parameters to predict employment/self-employment vs. retired. Employment/self-employment was associated with higher education status, increased risk for depression, and obesity, but with decreased risk for chronic diseases, loneliness and limitations in daily life activities. Age-appropriate working conditions, part-time options, and enhanced job characteristics may contribute to maintain a good health status and prevent negative aspects of work that can induce the risk for stress and depression.

Key words: Occupational health, Ageing, Employment, Health, Psychological well-being

Dramatic changes of life expectancies and labor markets in Europe and North America have raised discussions about work and retirement. Delaying retirement age in order to preserve public and private social security systems is an increasingly important agenda of many governments, especially in the countries of the European Union. However, a central aspect of working in older ages is health. The relationship between work/retirement status and health in older ages seems to be complex and partly unclear¹.

This contradictorily relationship has its basis in two different perspectives on ageing. First, the activity theory of aging states, that activity of a person determines life satisfaction. This implies that continuing work in older age should have positive health effects. However, the disen-

agement theory hypothesizes, that social disengagement is an adaptive ageing process. Hence, retirement should have positive effects on health².

Recent empirical evidence showed, that retired individuals have better psychological health than those still working. A “not retired”-subgroup experienced significant more stress, depression and less quality of life and autonomy³. Positive changes in mental health, self-reported health status, use of health care facilities were reports as the result of the transition from work life to retirement^{3, 4}.

A recent study with US manufacturing workers reported null to positive effects of retirement on health status⁵. Further evidence supports the disengagement theory of ageing, i.e. voluntary retired reported significant higher levels of life satisfaction compared to those continuing working. However, the same study showed that the reason of retirement do matter. The involuntary (health or organizational reasons) retired group had the lowest

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Table 1. Demographic, psychological and medical variables used in the study (n=13,447)

	n	Female (%)	Retired* (%)	ADL1+ (%)	Chronic dis-eases 2+ (%)	EURO-D caseness (%)	GALI Limitations (%)	BMI Adipositas (%)	Loneliness >3 (%)	CASP>37 (%)	ISCED>2 (%)
Austria	801	58.6	83.0	9.9	46.8	20.0	48.6	23.2	27.6	71.5	78.5
Germany	1,092	58.7	62.5	11.5	48.4	21.5	54.4	23.2	40.5	70.8	89.9
Sweden	853	53.1	72.0	7.5	39.3	18.8	43.5	15.7	43.0	69.2	62.8
Spain	913	53.1	71.5	11.2	52.7	20.6	36.9	17.4	27.1	48.5	24.1
Italy	822	50.6	69.5	9.0	40.5	26.9	36.7	15.8	45.4	40.3	39.3
France	776	56.7	73.3	13.7	46.6	33.4	42.3	22.1	41.2	61.0	62.3
Denmark	877	53.2	52.0	7.0	41.2	14.3	35.2	16.3	19.0	85.0	83.0
Greece	702	56.7	69.9	6.0	45.9	26.6	28.2	21.1	69.3	17.6	53.9
Switzerland	638	56.7	59.4	3.9	30.9	16.6	32.3	13.5	31.0	80.9	82.5
Belgium	986	55.1	64.5	11.2	49.9	28.1	44.1	18.8	41.5	62.4	67.9
Israel	389	54.5	66.3	9.5	46.3	24.6	33.7	19.9	59.7	38.6	76.9
Czech Rep	1,142	52.0	81.0	12.8	59.5	21.2	52.6	32.1	58.2	38.0	60.8
Poland	338	56.5	71.9	14.5	57.1	36.2	55.6	32.2	44.8	41.6	68.1
Luxembourg	276	52.2	68.5	6.5	48.6	23.9	43.8	24.3	36.1	72.2	59.8
Portugal	275	50.5	81.5	15.3	66.9	39.9	58.2	24.4	46.2	26.4	23.3
Slovenia	862	50.5	80.5	12.1	48.7	22.3	48.8	23.5	45.3	61.7	70.5
Estonia	1,315	52.9	60.7	14.9	51.1	31.5	58.3	29.6	43.2	41.0	75.7
Croatia	390	53.1	74.4	9.0	48.5	30.2	47.4	24.3	49.2	49.1	42.8

*vs. employed/self employed.

scores of life satisfaction⁶). A Canadian longitudinal study found no significant effects of retirement on health⁷). Another study indicates that retirement age is not associated with mortality⁸). More research have found opposite associations between health status and retirement. For 45 to 64 yr old Australian individuals a recent work found high levels of psychological distress in fully retired or unemployed compared to those at work⁹). An Irish study showed that involuntary retirement has negative effects on mental health. Furthermore, even voluntary retirement had negative effects—this effect was admittedly smaller¹⁰). A literature review reports substantial evidence that work in older aged can have positive effects on health and life satisfaction. Complete retirement leads to an increase of difficulties with mobility and daily activities, and a decrease physical and mental health. Authors attribute these findings to physical and intellectual activation that is usually related to work activities and can have protective effects for health¹¹). This would be in line with activity theory of ageing mentioned above. Besides health, education plays a major role for retirement age. Evidence indicates disparities in retirement age between those with higher vs. lower education status¹¹). However, most studies in this area have relatively low sample sizes and/or focus on one or few countries. Hence, national particularities may influence the validity of the results. Therefore, the objective of this study is to identify health and education related predictors for employment (vs. retired) between 60

and 69 yr in 16 EU member states, Israel and Switzerland participating the Survey of Health, Ageing and Retirement in Europe (SHARE Study).

This study is based on data retrieved from Survey of Health, Ageing and Retirement in Europe (SHARE) study Wave 6 (DOI: 10.6103/SHARE.w6.600) <http://www.share-project.org/>¹²). The SHARE study is a consortium survey supplied to households in 16 EU member States, Israel and Switzerland (Table 1). Data collection is based on face-to-face interviews, target population are all persons aged 50 yr or older at the time of sampling and who are residents in one of the participating countries. For methodological details see the publications of Börsch-Supan *et al.*^{12, 13}). The inclusion criteria of our study were age between 60 and 69 yr and employment status retired or employed/self-employed (i.e. exclusion of: unemployed; permanently sick or disabled; other). The latter information was retrieved from Job Episodes Panel (DOI: 10.6103/SHARE.jep.600), see Antonova *et al.* and Brugiavini *et al.* for methodological details^{14–16}). The Job Episodes Panel release 6.0.0 is based on SHARE Waves 1, 2 and 3 (SHARELIFE) (DOIs: 10.6103/SHARE.w1.600, 10.6103/SHARE.w2.600, 10.6103/SHARE.w3.600). We excluded respondents with missing data for country or gender from the study.

Limitations of activities of daily living (ADL) were assessed via one question, answers were dichotomized in 0 and 1 or more limitations. Number of chronic diseases were

based on one question. Participants had to indicate chronic diseases presented on a list. We used dichotomized data of chronic diseases, i.e. 0–1 vs. 2 or more chronic diseases.

Depressive symptoms were assessed by the 12-item version of EURO-D questionnaire. Participants were asked to report if they experienced the following symptoms the past month: depressed mood, pessimism, suicidality, guilt, sleep, interest, irritability, appetite, fatigue, concentration, enjoyment and tearfulness (response categories yes or no). A score of 4 is defined as depression caseness. A EURO-D's Cronbach's α of 0.72 has been reported for previously collected SHARE data¹⁷. Cronbach's α of the Wave 6 EURO-D is 0.69.

Furthermore, we used the global activity limitation indicator (GALI) in our study. GALI stresses the social dimension and involvement of activities. Previous research indicates that GALI is a significant predictor for mortality¹⁸. Data was dichotomized in 0 (not limited) and 1 (limited).

Body mass index (BMI) was categorized in <30 (not obese) and 30+ (obese). Loneliness was measured by a 3-item questionnaire, i.e. how much of the time do you feel a lack of companionship; how much of the time do you feel left out; how much of the time do you feel isolated from others? A scale score of 4 or more indicated loneliness in our study¹⁹. To assess well-being and quality of life the 12-item version of the CASP questionnaire was deployed by SHARE. Main dimensions are control, autonomy, self-realization, and pleasure²⁰. For dichotomization we used scale score (37 or smaller vs. >37). To assess education ISCED-97 levels were used (ranging from "0=pre-primary education" to "6=second stage of tertiary education) transformed into 0 to 2 vs. >2²¹).

We used IBM SPSS Statistics 24 for our statistical analysis. We calculated descriptives for all relevant items and factors by country (Table 1). Dichotomized variables were used to conduct a logistic regression model with employment status as dependent variable.

The final sample size was 13,447 (54.2% female), with 69.44% retired and 30.56% employed/self-employed. The mean age of retired (64.42; SD=2.82) vs. employed/self-employed (64.50; SD=2.85) did not differ significantly ($p=0.18$). For country-related analyses see Table 1.

Our results show differences in some variables between countries: For example, only 17% of the Austrian sample is employed/self-employed (vs. 48% in Denmark). Chronic diseases are most frequent in the Portuguese sample (66.9%), lowest in Switzerland (30.9%). The highest depression rate was found in Portugal (39.9%), the lowest in Denmark (14.3%). Loneliness was experienced by 19.0%

Table 2. Analysis of logistic regression with employment status as dependent variable

Variables	OR (95% CI)	<i>p</i>
ADL limitations >1	0.41 (0.33–0.51)	0.00
Chronic Diseases >2	0.38 (0.35–0.42)	0.00
EURO-D caseness (Depression)	1.26 (1.13–1.41)	0.00
GALI (Limitations with activities)	0.63 (0.57–0.69)	0.00
BMI (Adipositas)	1.21 (1.09–1.34)	0.00
Loneliness	0.79 (0.73–0.87)	0.00
CASP >37 (quality of life & well-being)	1.07 (0.97–1.17)	0.18
ISCED >2 (education)	2.62 (2.38–2.89)	0.00

Country and gender were included as control variables and remained insignificant. Reference category is employment or self-employment (vs. retired).

of the Danish sample, but by 69.3% in Greece. The formal education level was highest in Germany, and lowest in Portugal (Table 1).

Logistic regression model with employment status as dependent variable revealed education (+) and chronic diseases (–) as strongest predictors of employment/self-employment. Furthermore, ADL limitations (–), limitations with activities (GALI) (–), depression (EURO-D) (+), Body Mass Index (+) and loneliness (–) predicted employment status significantly (Table 2).

The objective of this study was to identify health and education related predictors for employment (vs. retired) between 60 and 69 yr. We found a strong relationship between higher education level and employment in our sample. In accordance with our results, previous research has shown that education level is related to intention to retire, i.e. less educated decide to leave active work earlier²². Education level influences earnings, health and employment. Recent research also suggests a direct effect of education on disability retirement²³.

We mentioned above, that previous studies revealed contradictory results regarding the association of retirement and health. Interestingly, in our study depression and obesity are significantly related with employment/self-employment. Previous research also indicated that retired have better mental health and psychological well-being than those still working³. Relief of work stress could play an important role in this relationship⁴.

Nevertheless, employment/self-employment in 60–69 yr aged is positively associated with other mental health and physical parameters. Although risk for depression is elevated, those at work experience less loneliness, less limitations in activities, and less chronic diseases. Recent evidence supports our results and connects loneliness with

a lack of social participation activities¹⁹⁾, which in turn is restrained by physical limitations, too. A recent literature review reports that complete retirement is associated with 23–29% increase in difficulties with mobility and daily activities, 8% increase in illness conditions, which is in line with our results. Staudinger *et al.* hypothesize that physical and intellectual activity and other factors closely related to work may decelerate the age-associated mental and physical changes¹¹⁾. Thus, lifestyle changes and less activity in the post-retirement period may enhance ageing processes. Although we excluded permanently sick persons from our study, chronic diseases and physical limitations may be a reason to leave work, too. Oksanen and Virtanen interpreted the health-retirement association as “bi-directionally”¹⁾. However, 11% decline in mental health seems to contradict our findings of increased depression risk for those continuing working¹¹⁾. An explanation could be that other aspects of mental health—e.g. dementia, but not depressive symptoms—may worsen in retirement. Other research supports our results: still employed older people seem to have negative attitudes towards working later in life, what could be a trigger for negative thinking and depressive symptoms²⁴⁾. Life quality measured by CASP in this study was not a significant predictor for employment/self-employment status.

To give a résumé our data indicate, that employment/self-employment between 60 and 69 is associated with and predicted by higher education and better mental/physical well-being. Employment/self-employment in later life seem have some characteristics that contribute to maintain a good health status. This include cognitive, physical activities and social participation^{11, 19)}. Nevertheless, our results show that employment/self-employment is associated with an increased risk of depression. First, negative attitudes of older employed towards working later than the normal retirement age may play a role in in development of depressive feelings²⁴⁾. Second, previous research indicates that depression, and depressive feelings are associated with job characteristics, especially lack of job control and high job demands^{25, 26)}.

Our study has a cross-sectional design, thus it is difficult to identify cause-and-effect relationships. However, this study includes more than 13,000 person from 16 countries, so that our results can be generalized and have high validity.

Raising employment rates between 60 and 69 yr will be an important measure to stabilize social security systems in an aging population. Thus, age-appropriate working conditions, part-time options, better job characteristics may be crucial factors to minimize negative aspects of working in higher ages and increase positive effects on health.

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Conflict of Interest

None declared.

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